

FORM PTO-1390 (Modified)
(REV 10-95)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

194112US6PCT

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

09/600860

INTERNATIONAL APPLICATION NO.
PCT/FR98/00148INTERNATIONAL FILING DATE
27 JANUARY 1998PRIORITY DATE CLAIMED
NONE

TITLE OF INVENTION

SHELF FOR SUPPORTING ITEMS, PARTICULARLY IN REFRIGERATED INSTALLATIONS

APPLICANT(S) FOR DO/EO/US

Flavio BORGNA

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ A copy of the International Search Report (PCT/ISA/210).
8. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
9. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
10. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
11. ☐ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

Items 13 to 18 below concern document(s) or information included:

13. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☒ A **FIRST** preliminary amendment.
A **SECOND** or **SUBSEQUENT** preliminary amendment.
16. ☐ A substitute specification.
17. ☐ A change of power of attorney and/or address letter.
18. ☐ Certificate of Mailing by Express Mail
19. ☒ Other items or information:

Request for Consideration of Documents Cited in International Search Report

PCT/IB/308

Drawings (5 Sheets)

Amended Sheet (Page 1)

U.S. APPLICATION NO. IF KNOWN SEE 37 CFR

097600860

INTERNATIONAL APPLICATION NO.

PCT/FR98/00148

ATTORNEY'S DOCKET NUMBER

194112US6PCT

20. The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

- ☒ Search Report has been prepared by the EPO or JPO **\$840.00**
- ☐ International preliminary examination fee paid to USPTO (37 CFR 1.482) **\$670.00**
- ☐ No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) **\$760.00**
- ☐ Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO **\$970.00**
- ☐ International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) **\$96.00**

ENTER APPROPRIATE BASIC FEE AMOUNT =**CALCULATIONS PTO USE ONLY****\$840.00**

Surcharge of **\$130.00** for furnishing the oath or declaration later than ☐ 20 ☒ 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).

\$130.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	12 - 20 =	0	x \$18.00
Independent claims	1 - 3 =	0	x \$78.00
Multiple Dependent Claims (check if applicable).			<input type="checkbox"/>

\$0.00**\$0.00****\$0.00****TOTAL OF ABOVE CALCULATIONS =****\$970.00**

Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable). ☐

\$0.00**SUBTOTAL =****\$970.00**

Processing fee of **\$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (f)).

\$0.00**TOTAL NATIONAL FEE =****\$970.00**

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable). ☐

\$0.00**TOTAL FEES ENCLOSED =****\$970.00**

Amount to be:	\$
refunded	
charged	\$

- ☒ A check in the amount of **\$970.00** to cover the above fees is enclosed.
- ☐ Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.
- ☒ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **15-0030** A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

**22850**

703-413-3000

& NEUSTADT, P.C.

Surinder Sachar
Registration No. 34,423

SIGNATURE

C. Irvin McClelland

NAME

21,124

REGISTRATION NUMBER

DATE

July 27, 2000

09/600860

194112US6PCT

534 Rec'd PCT/PTC 27 JUL2000

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF: :

FLAVIO BORGNA :

SERIAL NO: NEW U.S. PCT APPLN. : ATTN: APPLICATION BRANCH
(BASED ON PCT/FR98/00148)

FILED: HEREWITH :

FOR: SHELF FOR SUPPORTING
ITEMS, PARTICULARLY IN
REFRIGERATED INSTALLATIONS

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Prior to a first examination on the merits, please amend the above-identified
application as follows:

IN THE CLAIMS

Please amend the claims as follows:

Claim 1, line 2, delete "(2)";

line 4, delete "(4, 5, 6, 7)";

line 5, delete "(8, 9, 10, 11)".

Claim 2, line 2, delete "(4, 5, 6, 7)".

Claim 3, line 1, change "one of Claims 1 and 2," to --Claim 1,--;

line 3, delete "(4, 5, 6, 7)";

line 4, delete "(8, 9, 10, 11)";

line 5, delete "(2)".

Claim 4, line 1, change "one of Claims 1 to 3," to --Claim 1,--;

line 3, delete "(4, 5, 6, 7)";

line 5, delete "(12, 13, 14, 15)", same line, delete "(2)".

Claim 5, line 1, change "one of Claims 1 to 4," to --Claim 1,--;

line 3, delete "(4, 5, 6,";

line 4, delete "7)", same line, delete "(8, 9, 10, 11)";

line 5, delete "(2)".

Claim 6, line 1, change "one of Claims 1 to 5," to --Claim 1,--;

line 2, delete "(4, 5,";

line 3, delete "6, 7)";

line 4, delete "(2)".

Claim 7, line 1, change "one of Claims 1 to 6," to --Claim 1,--;

line 2, delete "(4, 5,";

line 3, delete "6, 7)".

Claim 8, line 1, change "one of Claims 1 to 7," to --Claim 1,--;

lines 2-3, delete "(4, 5, 6, 7)".

Claim 9, line 1, change "one of Claims 1 to 8," to --Claim 1,--;

lines 2-3, delete "(4, 5, 6, 7)";

line 3, delete "(2)";

line 4, delete "(17)";

line 5, delete "(16)";

line 6, delete "(2)".

Claim 10, line 1, change "one of Claims 1 to 9," to --Claim 1,--;

lines 2-3, delete "(4, 5, 6, 7)";

line 4, delete "(18, 19, 20, 21, 27)";

line 6, delete "(25, 26)";

line 9, delete "(22, 23)".

Claim 11, line 2, change "one of Claims 1 to 10," to --Claim 1,--;

line 3, delete "(4, 5, 6, 7)";

line 4, delete "(2)";

line 5, delete "(8, 9, 10, 11)".

Claim 12, line 2, delete "(4, 5, 6, 7)".

IN THE ABSTRACT

Please add the following new Abstract on a separate sheet.

--ABSTRACT OF THE DISCLOSURE

A shelf for holding articles, especially in refrigeration units. The shelf includes at least one supporting plate embodied by at least one panel made of glass or possibly a plastic material, and at least one corner piece which is preferably made of a plastic material and which covers only one corner of the plate. Such a structure provides a shelf which is especially economical.--

REMARKS

Favorable consideration of this application, as presently amended, is respectfully requested.

The present preliminary amendment is submitted to place the above-identified application in more proper format under United States practice. By the present preliminary amendment the claims have been amended to no longer recite any reference numerals or multiple dependencies. A new abstract is also submitted herein.

The present application is believed to be in condition for a full and thorough examination on the merits. An early and favorable consideration of the present application is hereby respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Registration No. 25,599
Attorney of Record
Surinder Sachar
Registration No. 34,423



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(703) 413-3000
Fax #: (703) 413-2220
GJM:SNS/smi

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534 Rec'd PCT/PTC 27 JUL 2000

SHELF FOR SUPPORTING ITEMS, PARTICULARLY IN
REFRIGERATED INSTALLATIONS

5 The present invention relates to a shelf (or
rack) for supporting items and which is intended to be
secured or mounted, in a horizontal position, in the
chassis of an item of furniture. In particular, it
relates to a shelf particularly suited to use in
chiller cabinets or refrigerators for supporting
10 foodstuffs in particular.

In domestic refrigerators, it is known practice
to employ racks in the form of solid sheets of plastic
or glass, such sheets being simple to clean, hygienic
and capable of supporting all kinds of foodstuffs
15 effectively. It is also known practice for these sheets
to be fitted with a surround which makes it possible to
eliminate the risk of injury on the edges of the sheets
and/or to strengthen the said sheets. In the case of a
plastic surround, this surround is generally produced
20 by positioning the sheet in a mould and injecting
plastic around the periphery of the sheet to form a
peripheral strip. It is also known practice for the
front edge of the sheet and part of the adjacent
lateral edges to be surrounded with a plastic profile
25 of appropriate size and possibly for the rear edge and
part of the adjacent lateral edges to be surrounded
with another plastic profile of appropriate size. In
any event, a change in panel size entails readjusting
the dimensions of the surround and therefore changing
30 the mould and/or the profiles, these adaptation
operations leading to additional costs.

The object of the present invention is to
provide a new shelf which is hygienic, practical and
reliable for supporting items, particularly in
35 refrigerated items of furniture, and which is simpler
and more economical to produce than the aforementioned
shelves, and which can, in particular, be manufactured
to different sizes without leading to significant costs
associated with the changes in size.

This objective is achieved by virtue of the shelf according to the invention which comprises at least one support panel formed of at least one sheet of glass, or possibly plastic, the shelf further
5 comprising at least one cornerpiece, preferably made of plastic, this cornerpiece covering just one corner of the panel.

The panel (or "support panel") of the shelf according to the invention is generally in the form of
10 a sheet or alternatively an element which has an approximately flat surface and is not very thick by comparison with its area; it comprises an upper face (in the functional position), which is generally approximately flat, intended to take the items that are
15 to be supported, and comprises an underside and at least two adjacent lateral sides bordering or delimiting the said upper face and underside, and forming at least one corner or "angle". In what follows, the term "corner" or "angle" of the panel is
20 obviously intended to denote a corner formed by lateral sides of the panel, that is to say a corner in the plane of the panel (that is to say in a horizontal plane when the panel is put into its functional position).

The panel comprises at least one corner and generally has several corners. In many instances, it has four corners; it is generally of approximately rectangular shape (when considering, for example, its upper face or its horizontal section in its position of
30 use) but may possibly have some other shape, for example a square shape or even some other polygonal shape.

The panel is formed of at least one sheet of glass or possibly plastic (preferably transparent for
35 aesthetic and practical reasons). In most cases, the panel is formed of just one sheet, generally a few millimetres thick, but it is also possible in certain instances to envisage more complex structures, particularly laminates made up, for example, of a

number of sheets of glass and/or plastic and possibly comprising one or more sheet(s) of other material(s). When the panel has a complex, particularly laminated, structure, it preferably has at least one sheet of glass or plastic on the upper face (particularly for hygiene and upkeep reasons) for taking the items that are to be supported. The panel preferably comprises one or more sheets of glass, the use of this material, in the context of the invention, offering advantages in terms of hygiene, rigidity, life, etc. For safety reasons, this glass is preferably tempered, especially when the panel consists of a single sheet of glass.

The surface of the panel is generally solid, but it is possible to envisage the use of a panel with one or more perforated areas. It is also possible to envisage the use of a panel with one or more grooves or one or more recesses or possibly one or more reliefs, for example, as described later, a panel with one or more grooves for anchoring or attaching auxiliary pieces, particularly for anchoring cover pieces. The panel may have decorative or functional layers or patterns, at the surface or interleaved, particularly decorative patterns produced in an ink that has to be fired deposited, for example, by screen printing and then baked. The panel is preferably transparent, in full or in part, for aesthetical and practical reasons.

According to the invention, the shelf comprises at least one cornerpiece (or corner protector or corner cover or alternatively corner protection piece or corner cover piece), preferably made of plastic, this cornerpiece covering just one corner or angle of the panel. The cornerpiece according to the invention is an elbowed or angular piece tailored to the angle of the panel that it is to cover. It has two lateral parts or legs (which meet forming the elbow or the corner) capable of at least partially covering each of the two adjacent sides of the panel that form the corner that is to be covered. This corner protector may cover the corner and the said sides over part or all of their

height and/or over part of the adjacent edges of the underside and/or of the top face, it being possible for coverage to differ according to the location (the protector may, for example, have decorative openings allowing a glimpse of the edge face of the panel at certain points). As a preference, the cornerpiece covers the corner and the aforementioned sides over at least part of their height (and preferably over the entire height at least at the protruding edge where the two sides that form the corner intersect) and over part of the adjacent edges of the underside and of the top face.

The length of each leg of the cornerpiece is generally chosen to be less than or equal to, and preferably less than, the length of the side that it covers. As a preference, for one range of products, such as, for example, refrigerator shelves, for which the dimensions vary by a few centimetres depending on the make and format, use is preferably made, regardless of the shelf produced for the aforementioned range, of a cornerpiece, each leg of which has a length shorter than or equal to the shortest standard length, in the aforementioned range, of the side that it is to cover.

The support panel generally has a number of corners. According to the invention, it is fitted with at least one cornerpiece as defined hereinabove at least at one of these corners and most often comprises several cornerpieces, each cornerpiece advantageously covering just one corner of the support panel. As a preference, the shelf has as many cornerpieces of the type described hereinabove (it being possible, however, for the pieces to exhibit differences with respect to one another, as illustrated later) as the panel has corners, each corner of the panel being covered by one cornerpiece. Thus, in the most frequent scenario in which the panel is of rectangular shape, it is preferably fitted with four cornerpieces, each one covering one corner of the panel.

The panel that forms the shelf according to the invention therefore has a covering in the form of at least one cornerpiece and, in general and as a preference, in the form of at least several
5 cornerpieces as defined hereinabove, these pieces being detachable from one another and being detachable from any other cover elements there may be. As a preference, the panel is surrounded by a cover around its entire periphery, this covering advantageously being formed of
10 a number of separate cover pieces (comprising the cornerpiece or pieces defined hereinabove) which have been assembled, each cover piece preferably fully or partially covering just one lateral side or two adjacent lateral sides of the panel. In particular, it
15 is possible to use cover pieces such as straight pieces to cover those parts of the lateral sides of the panel which are not covered by the cornerpieces; however, as a preference, for economical and practical reasons in particular, the panel is fitted, by way of periphery
20 cover pieces, only with the cornerpieces defined hereinabove, these pieces preferably having a length and shape such that they alone cover the entire periphery of the panel.

It can be seen that the shelf according to the
25 invention is particularly advantageous, particularly in terms of production, because it comprises at least one cover piece in the form of a cornerpiece which can alone protect a sharp edge (at a corner of the panel) and at least part of two adjacent sides of the panel,
30 and can do so regardless of the dimensions of the panel. Specifically, this cornerpiece can fit a chosen corner of the panel when the panel dimensions are changed, without changing its shape or geometric configuration or possibly its thickness, this
35 adaptability being economically advantageous. It is thus possible to produce various shelves of various sizes according to the invention, having at least one covering on their most "sensitive" parts, without the need to adapt the cover pieces used.

As a preference, at least two cover pieces and advantageously all of the pieces that cover the lateral sides of the shelf according to the invention are able to fit together. In particular, according to one
5 advantageous embodiment of the invention, at least one and preferably each cornerpiece can fit together with the adjacent pieces that cover the lateral sides of the panel. As a preference, the panel is fitted only, by way of cover pieces, with the cornerpieces defined
10 hereinabove, these pieces preferably having a length and shape such that they fit together and alone cover the entire periphery of the panel.

As a particular preference, at least two cover pieces and advantageously all of the pieces that cover
15 the lateral sides of the panel are able to fit together over part, preferably a large proportion, of their length and to slip or slide one inside the other so as to form a telescopic set of cover pieces. In particular, in one advantageous and preferred
20 embodiment of the invention, at least one cornerpiece, preferably at least two cornerpieces and more preferably still, each cornerpiece is (are) able to fit, at each of its (their) legs, onto a part, preferably a large proportion, of the length of the
25 leg, and to slip or slide in the adjacent cover pieces so as to form a telescopic set of cover pieces. The expression "a large proportion of the length" is to be understood as meaning a proportion which may represent up to about 99% of the said length, for example a
30 proportion of between about 40 and 96% of the length. In the sphere of refrigerator shelves, this "large proportion of the length" represents a number of centimetres, for example. Furthermore, when it is said that one cover piece or at least part of one cover
35 piece (for example a leg) can fit over a large proportion of its length, this obviously means that this piece can be fitted over a greater or lesser proportion of its length as the case may be, maximum

fitting-together occurring over a large proportion of its length.

The cover pieces preferably each have either one male end and one female end, or two male ends, or two female ends, the female end of one piece being capable of taking the male end of an adjacent cover piece, the male ends and the female ends being alternated. As a preference, as mentioned earlier, the lengths and shapes of the male and female ends are chosen so that the male end can be introduced into and slip or slide in the female end over a length of the order, for example, of several centimetres. This then yields a telescopic cover structure which can be fitted to panels of different sizes without the need to manufacture cover pieces of different lengths when the dimensions of the panel change. In other words, the same set of cover pieces (particularly cornerpieces) can be used to cover, over the entirety of their periphery, various panels which have the same shape and possibly the same thickness but which have different dimensions.

As a preference, the panel is fitted only, by way of periphery cover pieces, with cornerpieces such as those defined according to the invention, these pieces having a length and shape such that they fit together and can slip or slide (or enter) one in the other over part, preferably a large proportion, of the length of their respective legs, so as to form a telescopic structure capable of covering the entire periphery of the panel, for different sizes of panel. In particular, when using a moulded cornerpiece which has a male end and a female end capable, telescopically, of taking the male end of a second, identical, cornerpiece, it is possible, for covering the periphery of a rectangular panel, to use four identical cornerpieces, this embodiment having the advantage of requiring just one single mould to produce all of the cover pieces and to do so for varying panel dimensions.

The cornerpieces are preferably moulded. Any other cover pieces there might be may also be moulded or may, for example, be extruded. The cover pieces (including the cornerpieces) generally have an approximately U-shaped central cavity and may be equipped with one or more reliefs (or projections or pegs or ribs) on the inside for, for example, stiffening these pieces and/or positioning these pieces correctly relative to the panel, etc. As a preference, these pieces are attached to the panel, for example via one or more bonding or anchoring means, preferably via one or more internal reliefs allowing these pieces to be "clipped" (or anchored) into one or more grooves made on one and/or the other surface of the panel. The shelf may therefore be produced, for example, by forcibly fitting each of the cornerpieces onto one corner of the panel one after another (and by slipping and/or force-fitting any other cover pieces between the cornerpieces) until the reliefs enter the groove or grooves in the panel.

Depending on the embodiment, one or more cover pieces, particularly cornerpieces, may be customized and/or may comprise one or more additional functional and/or decorative parts or elements. In particular, one or more cover pieces (particularly cornerpieces) may comprise or be capable of taking, via appropriate fixing means, one or more means for assembling (or securing or attaching) to the chassis of an item of furniture in which the shelf is intended to be mounted and/or may comprise (or be capable of taking) one or more fins on the underside (or "flanges") in particular comprising one or more metal parts preferably embedded in a plastic, for stiffening the rack and giving it better stability when the shelf is attached to the chassis only along one edge ("self-supporting" rack). It is also possible to provide, on one or more cover pieces, one or more rims and possibly one or more seals between the rims and the panel so as to prevent liquids from running off the shelf and/or one or more strips

(or backrests) acting as buffers to prevent, for example, the products placed on the shelf from coming into contact with the wall of a refrigerated piece of furniture containing them. It is also possible to provide one or more grips on one side of the shelf intended to remain free, and the shelf may be capable of being fitted between runners by two opposing lateral sides, possibly via assembly means such as stubs or projections, inside the item of furniture intended to contain it. It is also possible to provide, on the cover pieces, one or more means for attaching additional functional and/or decorative element(s). In the preferred case according to the invention, in which the cover pieces, particularly the cornerpieces, fit together, it is possible to chose cover pieces which fit together over their entire height, even when the pieces have a complex cross section due to the presence of elements such as fins or buffer strips on these pieces, or it is possible to choose cover pieces which fit together over only part of their height, the remaining part being tailored by cutting, according to the size of the panel to be covered, as illustrated later in Figures 3 and 4 in particular.

In general, the shelf according to the invention may be produced by assembling one or more cornerpieces at the periphery of a support panel, each cornerpiece covering just one corner of the panel. The cornerpiece- or pieces and, as appropriate, the additional cover pieces may be slipped along the periphery of the panel and/or forcibly inserted until they anchor in one or more recesses or grooves in the glass; the cover pieces, particularly the cornerpieces, can also be fitted together one in the other over at least part of their length and of their height, the remaining part of their height possibly being adjusted by cutting.

Other advantages and features of the invention will become apparent in the light of the following

drawings which illustrate the invention without, however, limiting it, and in which:

• Figure 1a depicts a diagrammatic view from above of a cornerpiece used in a first embodiment of the invention;

• Figure 1b depicts a diagrammatic front-on view of the cornerpiece depicted in Figure 1a, in section on the line A-A of Figure 1a;

• Figure 1c depicts a diagrammatic side view of the cornerpiece depicted in Figure 1a, in section on the line B-B of Figure 1a;

• Figure 1d depicts a diagrammatic view from above (in the functional position) of a shelf according to a first embodiment of the invention, using the cornerpiece depicted in Figure 1a;

• Figure 1e depicts a diagrammatic view from above of a shelf of smaller dimensions than the shelf depicted in Figure 1d, but which uses the same cover pieces;

• Figure 2a depicts a diagrammatic view from above of a cornerpiece used in a second embodiment of the invention;

• Figure 2b depicts a diagrammatic view from above of another cornerpiece used in a second embodiment of the invention;

• Figure 2c depicts a diagrammatic view from above of a shelf according to a second embodiment of the invention, using the cornerpieces depicted in Figures 2a and 2b;

• Figure 3a depicts a diagrammatic view from above of a shelf according to a third embodiment of the invention, part of a cornerpiece having been removed so as to reveal reinforcing elements;

• Figure 3b depicts a diagrammatic view in exploded perspective of the shelf depicted in Figure 3a;

• Figure 4a depicts a diagrammatic half view from above of a shelf according to a fourth embodiment

of the invention, the shelf being symmetric with respect to the line depicted in chain line;

• Figure 4b depicts a diagrammatic side view of the shelf depicted in Figure 4a.

5 For reasons of simplicity and clarity, elements which are similar (even if they differ slightly from one embodiment to another) carry the same references from one figure to the next.

10 In all the embodiments of the invention illustrated in Figures 1d, 1e, 2c, 3a, 3b, 4a and 4b, the shelf 1 comprises a panel consisting of a sheet of tempered glass 2 and comprises four moulded plastic cornerpieces 4, 5, 6, 7, each covering one corner of the panel and part of the two adjacent sides forming
15 the corner; for example, as evident in Figure 3b, the pieces 4, 5, 6, 7 cover the corners 8, 9, 10, 11 and part of the adjacent sides that form these corners, respectively, the sides being referenced 12, 13, 14 and 15, and the piece 4 for example covering part of the
20 sides 12 and 13.

Each cornerpiece comprises two legs each having one end (4a and 4b, 5a and 5b, 6a and 6b, 7a and 7b, respectively) and the cornerpieces 4, 5, 6, 7 can fit together and slide one in the other over a substantial
25 proportion of the length of each leg. In these embodiments, it is thus possible, by fitting the cornerpieces together to a greater or lesser extent, to use the same cover pieces to cover panels of different sizes (see, in particular, Figure 1d and Figure 1e) on
30 their periphery, the shelves produced according to these embodiments being particularly economical.

Shelves can be manufactured quickly and easily by slipping each cornerpiece onto the edge of the panel one after another in such a way that they fit together
35 one in the other and then by forcibly inserting the cornerpieces into one or more grooves 16 (visible in Figure 3b) made on the upper face of the glass panel a few millimetres away from the edge until these pieces are anchored in the said groove or grooves. For this

purpose, the cornerpieces are equipped with internal projections 17 (visible in Figures 1b and 1c) that allow the cornerpieces to be anchored and held in the groove or grooves in the glass.

5 In the first embodiment illustrated in Figures 1d and 1e, the shelf comprises four moulded cornerpieces 4, 5, 6, 7, the structure of which is illustrated in Figures 1a, 1b and 1c representing the piece 4 (the other cornerpieces being identical in this
10 embodiment). Each cornerpiece comprises two legs, one leg having a male end (the ends 4a, 5a, 6a, 7a, respectively), and the other having a female end (4b, 5b, 6b, 7b, respectively) which can, telescopically, take the male end of an identical cornerpiece. It is
15 thus possible to use just one design of cover piece to cover panels of different sizes (Figure 1d and Figure 1e) on their periphery, the shelves produced according to this embodiment being particularly economical.

20 In the embodiment illustrated in Figures 1d and 1e, it can also be seen that the panel is decorated on its top face with parallel lines 3 produced, for example, using an ink which is screen-printed then baked.

25 In the embodiment depicted in Figure 2c, the shelf comprises four moulded cornerpieces, identical in pairs, each covering a corner of the panel and part of the two adjacent sides that form the corner. The cornerpieces 5 and 7 (the structure of which is
30 illustrated in Figure 2b) each comprise two legs each having a male end (5a and 5b, 7a and 7b, respectively, the last-mentioned reference not being visible in Figure 2c, the part 7b being concealed by the part 4a into which it is fitted), while the cornerpieces 4 and
35 6 (Figure 2a) each comprise two legs each having a female end (4a and 4b, 6a and 6b, respectively) capable of taking a male end of one of the cornerpieces 5 and 7. The alternating cornerpieces can thus be fitted together and slide one in the other and are thus

adaptable to suit panels of different sizes to form shelves of different sizes, minimizing the adaptation needed.

5 In the third embodiment illustrated in Figures 3a and 3b, each cornerpiece comprises a leg which has one male end (4a, 5a, 6a, 7a, respectively) and a leg which has a female end (4b, 5b, 6b, 7b, respectively) capable, over part of its length, of taking the male end of an adjacent cornerpiece.

10 The shelf can be inserted between the runners of an item of furniture via studs or stubs 18, 19 borne respectively by the cornerpieces 4 and 5 and via projections 20, 21 borne respectively by the cornerpieces 6 and 7. In Figure 3a, a removed part of
15 the cornerpiece 7 allows a glimpse of the internal reinforcing walls 24 of the cornerpieces, particularly for reinforcing the projections 20, 21. The cornerpieces 4 and 5 are also respectively fitted with backrests 22, 23, the backrest 23 which, unlike the
20 rest of the piece, cannot be fitted together, being cut to an appropriate length in order to be able to meet up with the backrest 22 when the two cornerpieces 4 and 5 are fitted together at their definitive length. This backrest makes it possible to prevent foodstuffs from
25 dropping into the air circulation space provided at the rear of the shelf when the shelf is used in a refrigerator or to prevent the foodstuffs from touching the back wall of the refrigerated chamber.

The embodiment illustrated in Figures 4a and 4b
30 is identical to the embodiment illustrated in Figure 3, except that the parts 18, 19, 20, 21 used to assemble the shelf in an item of furniture have been omitted, assembly being achieved using other elements 25, 27, and except that the backrest 23 can fit into the
35 backrest 22, that is to say that the cornerpieces 4 and 5 can fit together over their entire height. As regards the assembling of the shelf into the chassis of an item of furniture, the cornerpieces 4 and 7 (and symmetrically, the cornerpieces 5 and 6) each comprise,

on the underside of one of their legs, a fin or "flange" 25, 26, the fin of the cornerpiece 4 (and symmetrically, of the cornerpiece 5) comprising, at one of its ends, an attachment means 27 allowing the shelf to be attached by one of its side to a chassis; in this case, each fin may comprise a metallic part (not visible) embedded in the plastic to stiffen the rack and give it better stability. The fins of the cornerpieces 4 and 7 (and symmetrically, of the pieces 5 and 6) can be fitted together or may have been cut to appropriate lengths to allow them to meet when the pieces are fitted together.

In some embodiments which are far less advantageous, it would also be possible to envisage producing the shelves illustrated in Figures 1d, 1e, 2c, 3a, 3b, 4a and 4b using cornerpieces devoid of the male ends (for example, devoid of the ends 4a, 5a, 6a, 7a in the embodiment illustrated in Figure 1), the parts corresponding to these ends being replaced by straight cover pieces which join the cornerpieces together and can fit together with and slide in the cornerpieces. It would also be possible to envisage omitting the said male ends of the cornerpieces, leaving the glass bare at certain points.

Other alternative forms may also be envisaged for tailoring the shelf (in terms of aesthetics and/or functional characteristics) to the items of furniture in which it is to be mounted.

The shelf according to the invention is particularly suited to supporting items in refrigerated installations (as refrigerator shelves intended to support food for example) but can also be used to advantage in other, non-refrigerated, items of furniture. It has advantages in terms of simplicity and cost of manufacture, simplicity of use, health and safety, and in terms of aesthetic appearance. The shelf according to the invention can be used to advantage in refrigerators or chiller cabinets or any other similar structure, refrigerated or otherwise.

CLAIMS

1. Shelf for supporting items, comprising at least one support panel (2) formed of at least one sheet of glass, or possibly plastic, and further comprising at least one cornerpiece (4, 5, 6, 7), this cornerpiece covering just one corner (8, 9, 10, 11) of the panel.
2. Shelf according to Claim 1, characterized in that the cornerpiece (4, 5, 6, 7) is made of plastic.
3. Shelf according to one of Claims 1 and 2, characterized in that it comprises a number of cornerpieces (4, 5, 6, 7), each cornerpiece covering just one corner (8, 9, 10, 11) of the support panel (2).
4. Shelf according to one of Claims 1 to 3, characterized in that it comprises a number of cover pieces (4, 5, 6, 7), each cover piece covering, in full or in part, just one side or just two adjacent sides (12, 13, 14, 15) of the panel (2).
5. Shelf according to one of Claims 1 to 4, characterized in that the panel is fitted only, by way of peripheral cover pieces, with cornerpieces (4, 5, 6, 7) each one covering just one corner (8, 9, 10, 11) of the support panel (2), these pieces preferably having a length and shape such that they alone cover the entire periphery of the panel.
6. Shelf according to one of Claims 1 to 5, characterized in that at least one cornerpiece (4, 5, 6, 7) can fit together with the adjacent pieces that cover the sides of the panel (2).
7. Shelf according to one of Claims 1 to 6, characterized in that at least one cover piece (4, 5, 6, 7) can slip or slide in the adjacent cover pieces so as to form a telescopic set of cover pieces.
8. Shelf according to one of Claims 1 to 7, characterized in that the cover piece or pieces (4, 5, 6, 7) are pieces made of moulded plastic.
9. Shelf according to one of Claims 1 to 8, characterized in that the cover piece or pieces (4, 5,

6, 7) are attached to the panel (2) via one or more internal reliefs (17) allowing these pieces to be anchored in one or more grooves (16) made on the panel (2).

5 10. Shelf according to one of Claims 1 to 9, characterized in that one or more cover pieces (4, 5, 6, 7) comprises (comprise) or is (are) capable of taking one or more means (18, 19, 20, 21, 27) of assembly with the chassis of an item of furniture
10 and/or one or more fins (25, 26) on the underside for stiffening the shelf and/or one or more rims preventing liquids from running off the shelf and/or one or more buffer strips (22, 23) and/or one or more grips and/or one or more means for attaching additional functional
15 and/or decorative element(s).

11. Method of manufacturing a shelf according to one of Claims 1 to 10, whereby one or more cornerpieces (4, 5, 6, 7) are assembled at the periphery of a support panel (2), each cornerpiece covering just one
20 corner (8, 9, 10, 11) of the panel.

12. Method according to Claim 11, characterized in that the cover pieces (4, 5, 6, 7) are fitted together one in the other over at least part of their length and of their height.

ABSTRACT

The invention relates to a shelf (1) for holding articles, especially in refrigeration units, comprising at least one supporting plate (2) embodied by at least one panel made of glass or possibly a plastic material, and at least one corner piece (4, 5, 6, 7) which is preferably made of a plastic material and covers only one corner (8, 9, 10, 11) of the plate. The type of shelf is especially economical.

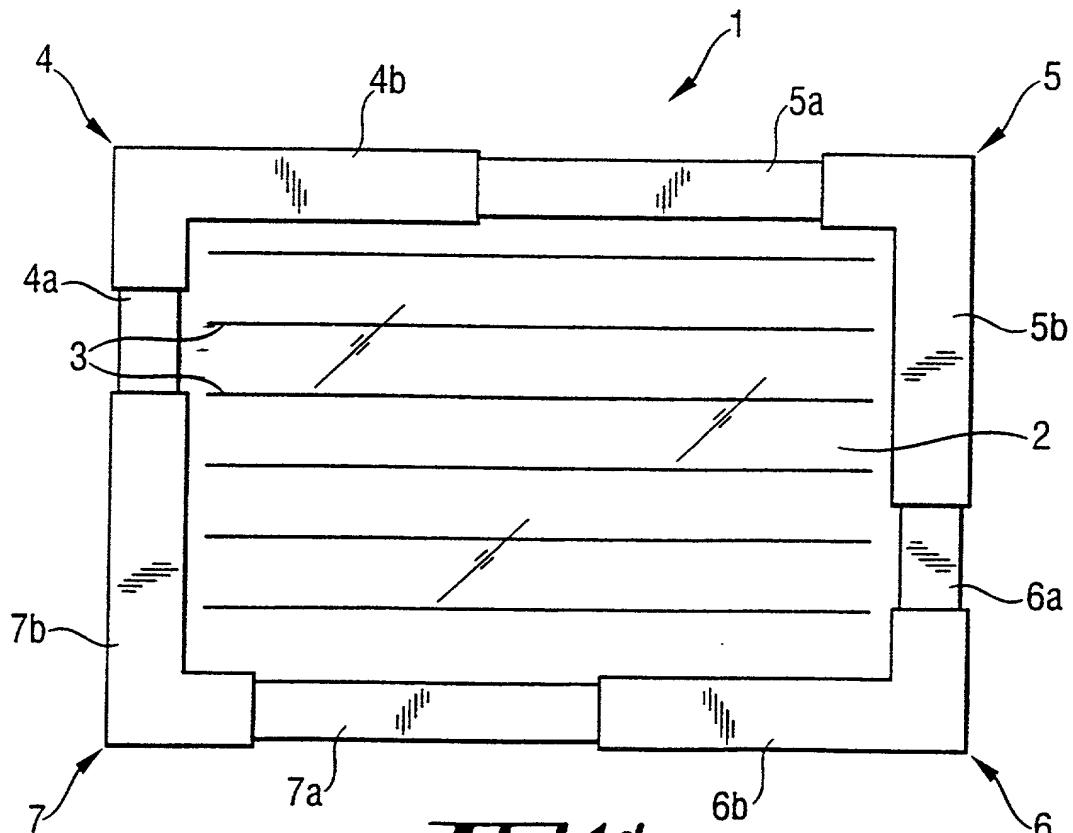
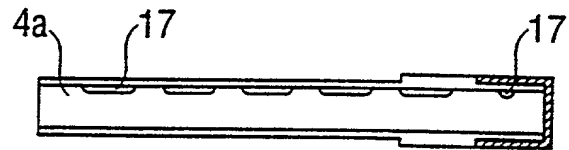
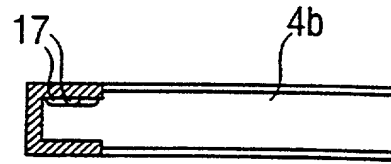
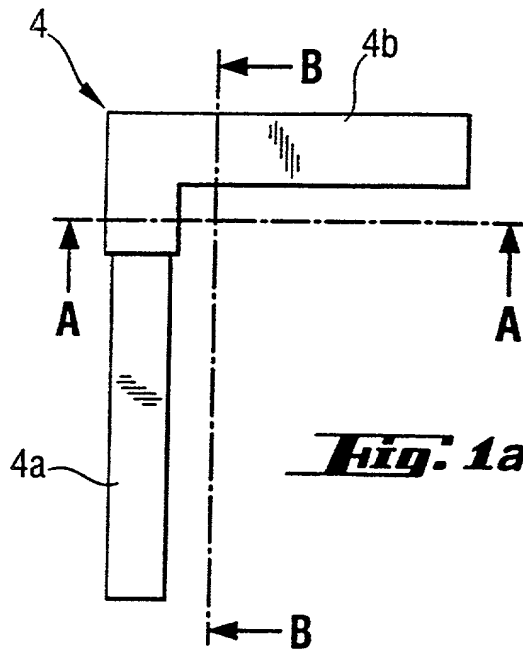
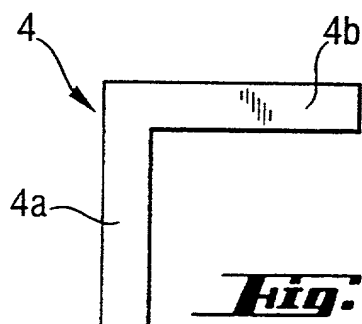
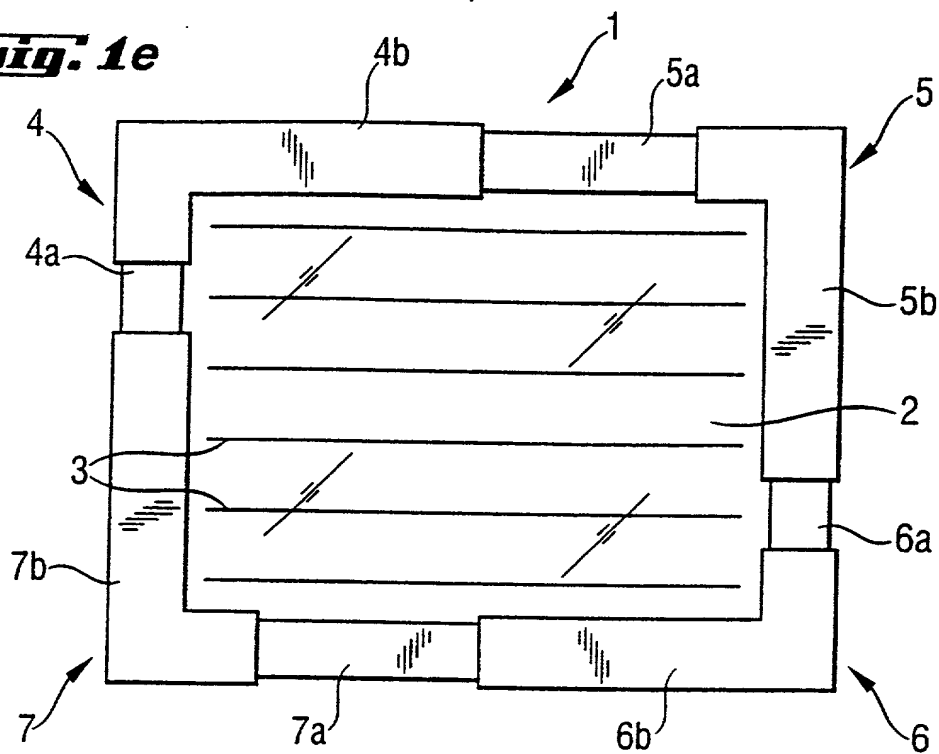
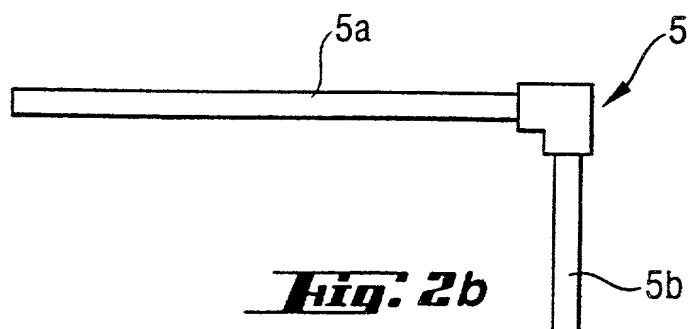
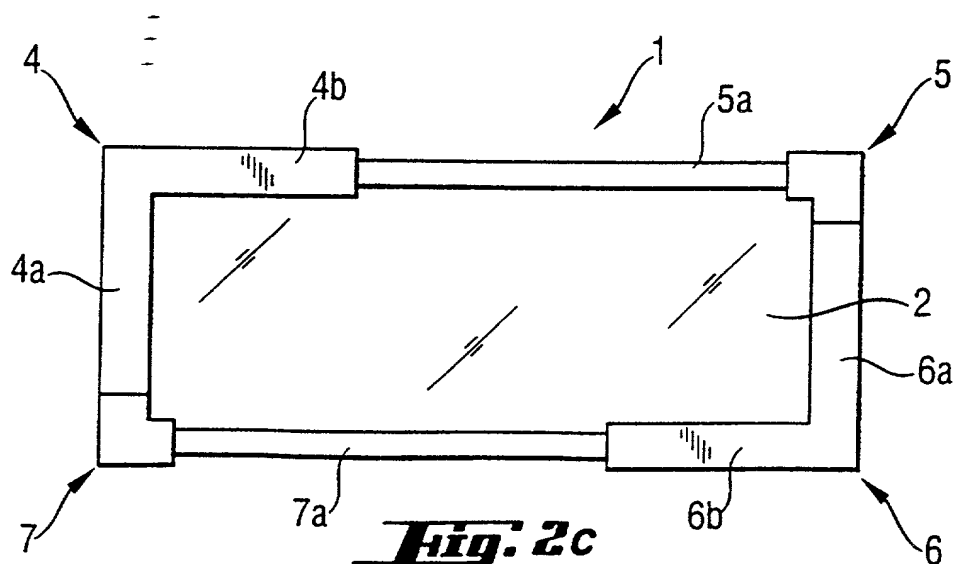


Fig. 1e**Fig. 2a****Fig. 2b****Fig. 2c**

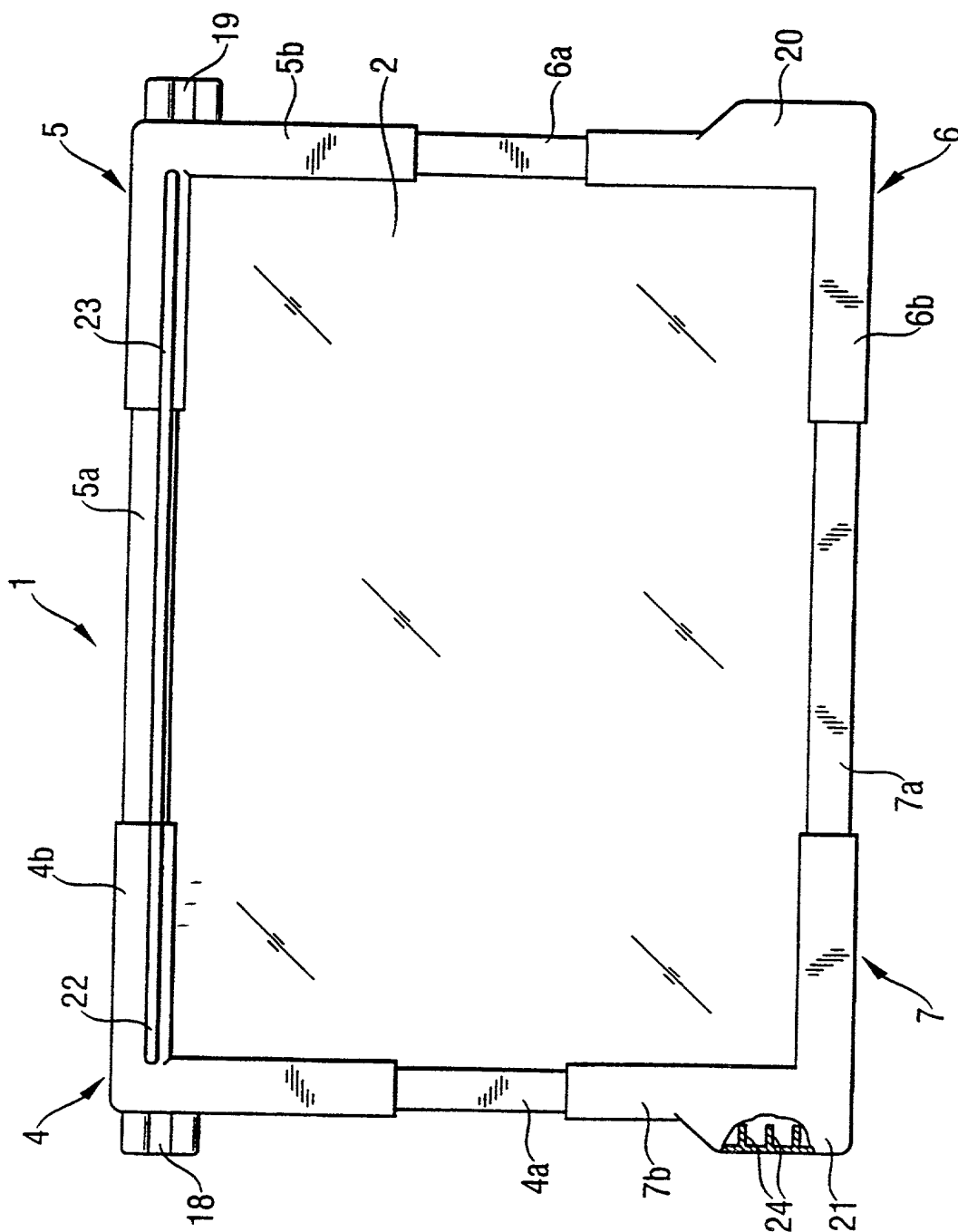
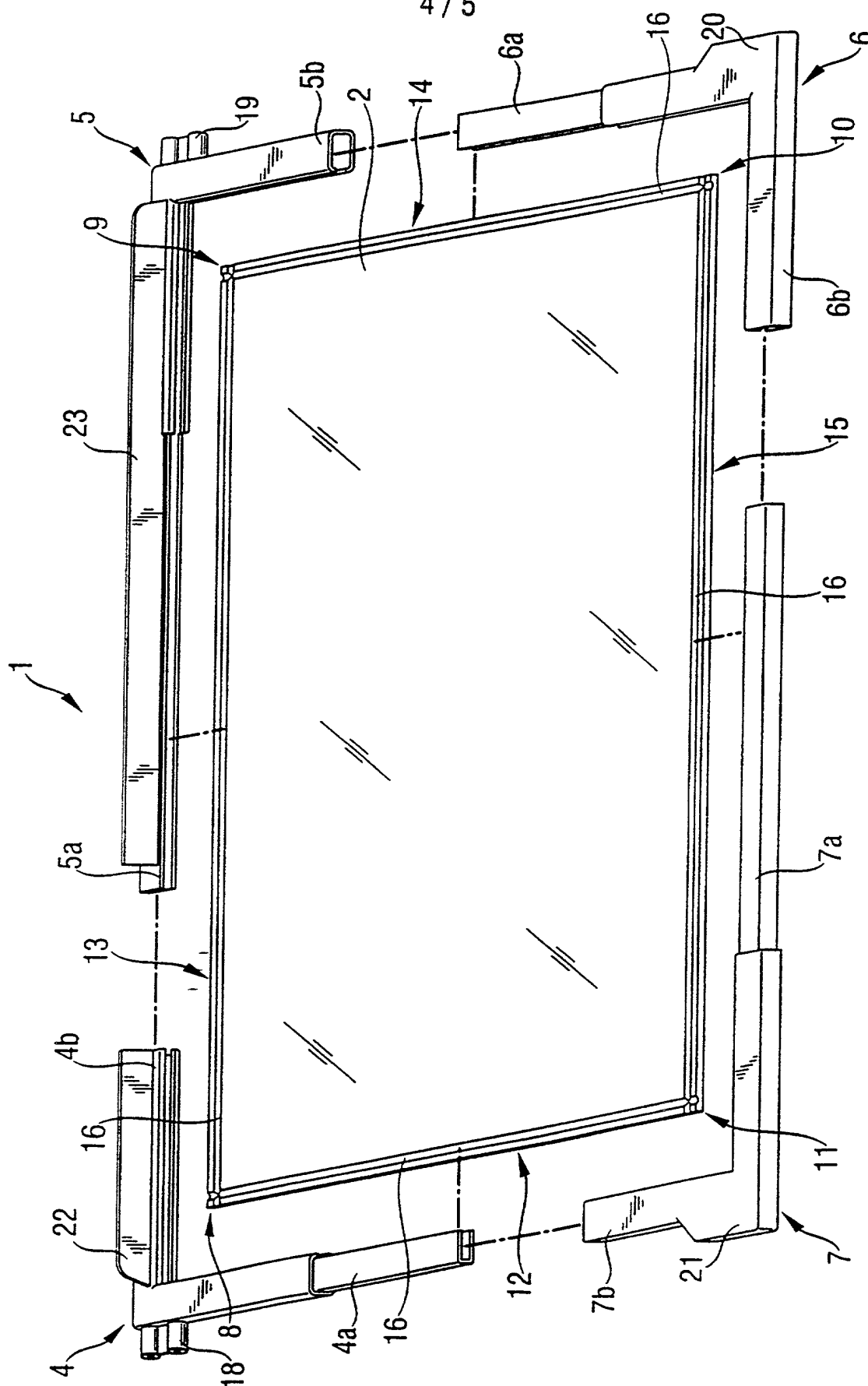


Fig. 3a

4 / 5

**Fig. 3b**

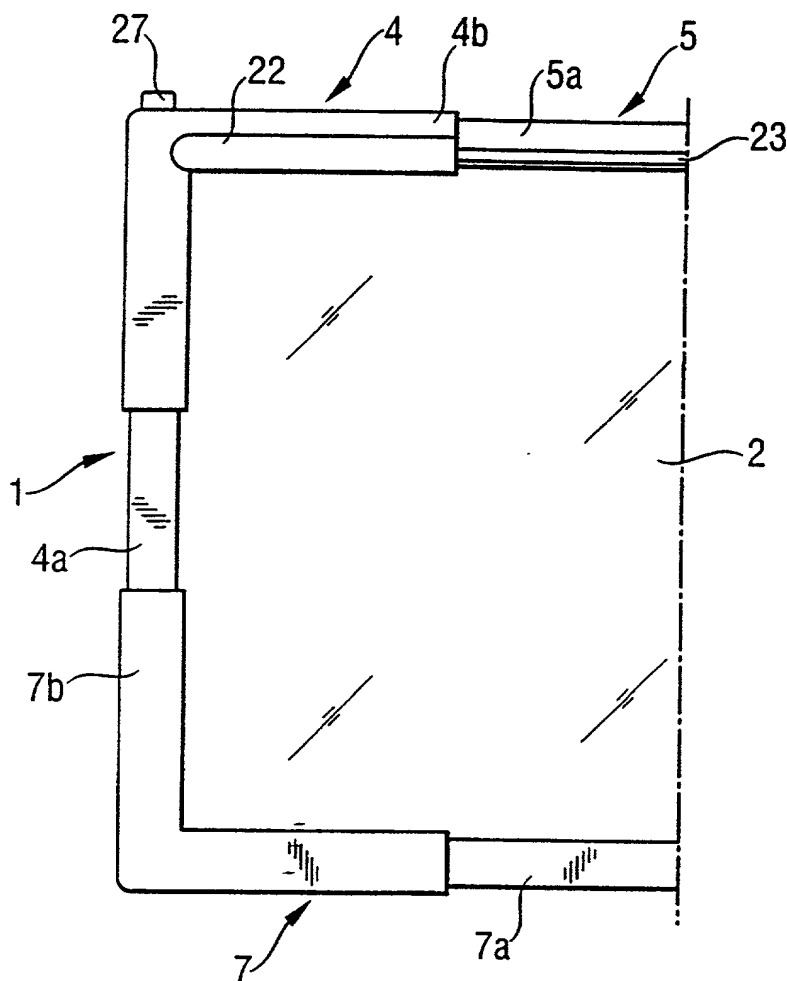


Fig. 4a

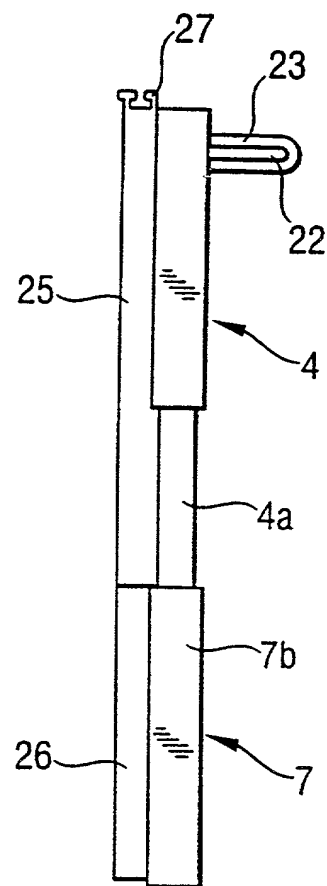


Fig. 4.b

Declaration and Power of Attorney For Patent Application

Declaration Pour Demandes de Brevets Avec Pouvoirs

French Language Declaration

En tant qu' inventeur nommé ci-après, Je déclare par le présent acte que:

Mon nom, mon domicile, mon adresse postale, ma nationalité sont ceux qui figurent ci-après,

Je déclare que je crois être l'inventeur original, premier et unique (si un seul nom figure sur le présent acte) ou un des co-inventeurs, originaux et premiers (si plusieurs noms figurent sur le présent acte) du sujet revendiqué et pour lequel un brevet est demandé sur la base de l'invention intitulée:

dont la description
(cocher la case correspondante)

☐ est annexée au présent acte.

☐ a été déposée _____

Numéro de série de la demande _____

et modifiée le _____
(si approprié)

Je déclare par le présent acte avoir examiné et compris le contenu de la description identifiée ci-dessus, revendications y compris, et le cas échéant telle que modifiée par l'amendement cité plus haut.

Je reconnais le devoir de divulguer l'information qui est en rapport avec l'examen de cette demande selon Titre 37 du Code des Règlements Fédéraux §1.56(a).

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

SHELF FOR SUPPORTING ITEMS, PARTICULARLY

IN REFRIGERATED INSTALLATIONS

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on July 27, 2000 as

Application Serial No. 09/600,860

and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

French Language Declaration

Je revendique par le présent acte avoir la priorité étrangère, en vertu du Titre 35, § 119(a)-(d) ou § 365(b) du Code des Etats-Unis, sur toute demande étrangère de brevet ou certificat d'inventeur ou, en vertu du Titre 35, § 365(a) du même Code, sur toute demande internationale PCT désignant au moins un pays autre que les Etats-Unis et figurant ci-dessous et, en cochant la case, j'ai aussi indiqué ci-dessous toute demande étrangère de brevet, tout certificat d'inventeur ou toute demande internationale PCT ayant une date de dépôt précédant celle de la demande à propos de laquelle une priorité est revendiquée.

Prior foreign application(s)
Demande(s) de brevet antérieure(s)

_____ (Number) (Numéro)	_____ (Country) (Pays)
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_____ (Number) (Numéro)	_____ (Country) (Pays)
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Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 119(e) du Code des Etats-Unis, de toute demande de brevet provisoire effectuée aux Etats-Unis et figurant ci-dessous.

_____ (Application No.) (N° de demande)	_____ (Filing Date) (Date de dépôt)
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_____ (Application No.) (N° de demande)	_____ (Filing Date) (Date de dépôt)
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Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 120 du Code des Etats-Unis, de toute demande de brevet effectuée aux Etats-Unis, ou en vertu du Titre 35, § 365(c) du même Code, de toute demande internationale PCT désignant les Etats-Unis et figurant ci-dessous et, dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT, en vertu des dispositions du premier paragraphe du Titre 35, § 112 du Code des Etats-Unis, je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations, dont j'ai pu disposer entre la date de dépôt de la demande antérieure et la date de dépôt de la demande nationale ou internationale PCT de la présente demande:

PCT/FR98/00148 27 January 1998

_____ (Application No.) (N° de demande)	_____ (Filing Date) (Date de dépôt)
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_____ (Application No.) (N° de demande)	_____ (Filing Date) (Date de dépôt)
---	---

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, véridique et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour véridique; et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des Etats-Unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande de brevet ou du brevet délivré à partir de celle-ci.

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365 (b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below, by checking the box, and have also identified below any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Priority Not Claimed
Droit de priorité non revendiqué

_____ (Day/Month/Year Filed) (Jour/Mois/Année de dépôt)	<input type="checkbox"/>
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_____ (Day/Month/Year Filed) (Jour/Mois/Année de dépôt)	<input type="checkbox"/>
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I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

_____ (Status) (patented, pending, abandoned) (Statut) (breveté, en cours d'examen, abandonné)
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_____ (Status) (patented, pending, abandoned) (Statut) (breveté, en cours d'examen, abandonné)
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

French Language Declaration

POUVOIR: En tant qu'inventeur, je désigne l'(les) avocat(s) et/ou l' (les) agent(s) suivant(s) pour poursuivre la procédure de cette demande et traiter toute affaire la concernant supris du Bureau des Brevets et de Marques:

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

Norman F. Oblon, Registration Number 24,618; Marvin J. Spivak, Registration Number 24,913; C. Irvin McClelland, Registration Number 21,124; Gregory J. Maier, Registration Number 25,599; Arthur I. Neustadt, Registration Number 24,854; Richard D. Kelly, Registration Number 27,757; James D. Hamilton, Registration Number 28,421; Eckhard H. Kuesters, Registration Number 28,870; Robert T. Pous, Registration Number 29,099; Charles L. Gholz, Registration Number 26,395; Vincent J. Sunderdick, Registration Number 29,004; William E. Beaumont, Registration Number 30,996; Steven B. Kelber, Registration Number 30,073; Robert F. Gnuse, Registration Number 27,295; Jean-Paul Lavalleye, Registration Number 31,451; Stephen G. Baxter, Registration Number 32,884; Martin M. Zoltick, Registration Number 35,745; Robert W. Hahl, Registration Number 33,893; Richard L. Treanor, Registration Number 36,379; Steven P. Weihrouch, Registration Number 32,829; John T. Goolkasian, Registration Number 26,142; Marc R. Labgold, Registration Number 34,651; William J. Healey, Registration Number 36,160; Richard L. Chinn, Registration Number 34,305; Steven E. Lipman, Registration Number 30,011; Carl E. Schlier, Registration Number 34,426; James J. Kulbaski, Registration Number 34,648; Catherine B. Richardson, Registration Number 39,007; Richard A. Neifeld, Registration Number 35,299; and J. Derek Mason, Registration Number 35,270; with full powers of substitution and revocation.

Adresser toute correspondance à:

Send Correspondence to:

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
FOURTH FLOOR
1755 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VIRGINIA 22202 U S A

Adresser toute communication téléphonique à:
(Nom) (Numéro de téléphone)

Direct Telephone Calls to: (name and telephone number)

(703) 413-3000

Nom complet du seul ou premier inventeur	Full name of sole or first inventor <u>Flavio BORGNA</u>
Signature de l'inventeur	Inventor's signature <u>Flavio Borgna</u> <i>seht</i> <i>5/12/90</i>
Date	Date
Domicile	Residence <u>Borgna Veder s.r.l., Via Nazionale, 19, I-12020 S. Defendente Cervasca, ITALY</u>
Nationalité	Citizenship <u>ITALY</u>
Adresse Postale	Post Office Address <u>same as above</u>
Nom complet du second co-inventeur, le cas echeant	Full name of second joint inventor, if any
Signature de l'inventeur	Second Inventor's signature
Date	Date
Domicile	Residence
Nationalité	Citizenship
Adresse Postale	Post Office Address

(Fournir les mêmes renseignements et la signature de tout co-inventeur supplémentaire.)

(Supply similar information and signature for third and subsequent joint inventors.)